Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (canceled).

Claim 2 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the conveyor belt (4) includes a regenerative heat exchanger which absorbs the heat from the material (3) during travel toward an unloading area (9) and it gives it up to the air in the return run.

Claim 3 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the device is adapted for installation underneath the boilers or incinerators wherein the combustion occurs either under vacuum (2) or pressure (7) with respect to the outer atmosphere.

Claim 4 (previously presented): The conveyor/cooler according to claim 3, characterized in that the device allows the recovery of thermal energy taken from the hot material (3) when it operates under vacuum; said recovery takes place by introducing the heated air with the heat given up by the material (3) into the combustion chamber of the boiler (2) by thus mixing it to the main combustion air.

Claim 5 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the intake air capacity into the metal container (1) from air intake ports (11, 12) can be adjusted in order to optimize the cooling.

Claim 6 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that a scraping conveyor (10) with chains or with a metal net is

provided in order to scrape the material's dust from the bottom of the container (1), wherein is deposited and is conveyed towards an unloading area (9).

Claim 7 (canceled).

Claim 8 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the number of nozzles (5) therein, their plano-volumetric arrangement inside of the metal container (1) and the type of each single nozzle (5), are preset according to the chemical-physical characteristics of the conveyed material (3), according to the capacity of the same material and according to the desired cooling degree.

Claim 9 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the capacity of the nozzles (5), the intervention sequence and the duration of the activation are defined according to the temperature of the material (3) and according to the level of the capacity of the same material.

Claim 10 (previously presented): The conveyor/cooler according to claim 9, characterized in that inside the metal container (1) temperature sensors (14) are installed whose signals are used in order to adjust the operation of the atomized water sprinkling system.

Claim 11 (previously presented): The conveyor/cooler according to claim 8, characterized in that the spraying angle of the nozzles (5) covers the entire surface of the traveling bed formed by the hot material (3).

Claim 12 (previously presented): A conveyor/cooler of solid hot loose materials (3) generated by boilers and by various industrial processes, comprising a sealed metal container (1) connected to combustion chamber of a boiler or an incinerator (2, 7), and a metal conveyor belt (4) in the metal container (1) for receiving the hot loose material (3) from the combustion chamber by gravity and forming a traveling continuous bed of material cooled by the joint action of atomized water jets and air flows, and wherein nozzles (5) are provided in the metal container (1) and define an atomized water sprinkling system and are connected

to a compressed air plant in order to jointly atomize water and air with respect to the need to optimize the cooling by appropriately measuring out the capacities of the water and air.

Claim 13 (previously presented): A conveyor/cooler of solid hot loose materials (3) generated by boilers and by various industrial processes, comprising a sealed metal container (1) connected to combustion chamber of a boiler or an incinerator (2, 7), and a metal conveyor belt (4) in the metal container (1) for receiving the hot loose material (3) from the combustion chamber by gravity and forming a traveling continuous bed of material cooled by the joint action of atomized water jets and air flows, and equipped with a capacity control system for the hot loose material (3) conveyed by the metal belt (4) which allows determining reference values suitable to adjust the intensity of the water and air flows.

Claim 14 (previously presented): The conveyor/cooler according to claim 13, characterized in that the capacity control of the hot loose conveyed material (3) is carried out by using a weighing system (8) directly connected to the conveyor belt (4).

Claim 15 (original): The conveyor/cooler according to claim 13, characterized in that the capacity control of the hot loose conveyed material (3) can be carried out by using a strap iron (15) hinged to the cover of the metal container (1).

Claim 16 (currently amended): The conveyor/cooler according to claim 12, ~~claim 1,~~ characterized in that the plates of the metal conveyor belt (4) are equipped with appropriate slots (6) that allow the passage of the cooling air flow through the whole layer of the continuous bed formed by the hot loose material (3) traveling on said metal belt (4).

Claim 17 (previously presented): The conveyor/cooler according to claim 16, characterized in that the geometry, the number and the arrangement of the slots (6) made in the plates of the metal conveyor belt (4) is defined as a function of the type, the amount and mainly with respect to the grain size of the conveyed material (3) so as to prevent this material from leaking and falling to the bottom of the metal container (1).

Claim 18 (previously presented): The conveyor/cooler according to claim 16, characterized in that the fraction of cooling air flow which runs through the slots (6) in the plates of the metal belt (4) is adjustable, with respect to the specific cooling needs and to the possible presence of unburnt matter.